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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,945	04/30/2001	Poh Boon Phua	1085-022-PWH	3317

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EXAMINER

JACKSON, CORNELIUS H

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 10/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/845,945

Applicant(s)

PHUA ET AL.

Examiner

Cornelius H. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul IP

PAUL IP

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 3-7 and 14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification fail to teach the pumping radiation comprising a 1 μ m resonant cavity having the (Tm:YAG sample) solid-state sample located therein, that is, there is no mention in the specification of the solid-state sample (capable of producing lasing transitions corresponding to a wavelength of about 2 μ m) being placed within the 1 μ m resonant cavity of the source of pumping radiation, **see Figure 1 and page 6, line13-page 7, line 6**. Claims 4-7 are rejected on the basis of depending on claim 3.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-22 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Regarding claims 1 and 12, the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so

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perform. It does not constitute a limitation in any patentable sense. In re Hutchison, 69 USPQ 138. Claims 2-11 and 13-22 are rejected on the basis of depending on an indefinite claim.

6. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: a resonant cavity and the reflective ends of the cavity. Claims 2-11 are rejected on the basis of depending on an indefinite claim.

7. Regarding claims 8 and 19, the recitation of "a second pair of members" indicates that the presence of a first pair of members, but the claim on which claim 8 and 19 depend upon excludes such structure and the located of such structure. Because the presence of a first pair of members is missing, it is unclear as to what is truly being claimed. Claims 9 and 20 are rejected on the basis of depending on any indefinite claim.

8. Claim 15 recites the limitation "the step of providing a resonant cavity" in line 1-2 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claims 16-18 are rejected on the basis of depending on indefinite claim 15.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

10. Claims 1-2 and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Meissner (6,025,060). Meissner discloses a device for producing laser radiation having a wavelength of about 2 μm comprising a solid-state sample capable of producing lasing transitions corresponding to a wavelength of about 2 μm and a source of pumping radiation produced thereby is absorbed by the solid-state sample, causing the solid-state sample to emit radiation having a wavelength of about 2 μm .

Regarding claim 2, Meissner discloses the solid-state sample is a Tm:YAG sample.

Regarding claims 12 and 13, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the rejection used against the device, stands for the method as well.

11. Claims 1, 2, 8-13 and 19-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Jackson et al. "Efficient Gain-Switched Operation of a Tm-Doped Silica Fiber laser". Jackson et al. disclose a device **Fig. 6** for producing laser radiation having a wavelength of about 2 μm , **see page 779, section I., first paragraph**, comprising a

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solid-state sample (**Tm-doped Silica Fibre**) capable of producing lasing transitions corresponding to a wavelength of about 2 μm and a source of pumping radiation (**Nd:YAG**) produced thereby is absorbed by the solid-state sample (**Tm-doped Silica Fibre**), causing the solid-state sample (**Tm-doped Silica Fibre**) to emit radiation having a wavelength of about 2 μm .

Regarding claim 2, Jackson et al. disclose the solid-state sample is a Tm:YAG sample, **see page 785, first full paragraph**.

Regarding claim 8, Jackson discloses the solid-state sample is interposed between a second pair of members (**a Steering Mirror and the High Reflector**), at least one of which is reflective to radiation having a wavelength of about 2 μm .

Regarding claim 9, Jackson discloses the second pair of members located within the source of radiation having a wavelength of about 1 μm , **see page 779, section I., first paragraph**.

Regarding claim 10, Jackson discloses the stated limitation, **see page 779, section I., first paragraph**.

Regarding claim 11, Jackson discloses the source of radiation **100** having a wavelength **102** of 1.064 μm , **see page 779, section I., first paragraph**.

Regarding claims 12, 13, and 19-22, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the rejection used against the device, stands for the method as well.

12. Claims 1, 8, 9, 11-12, 19, 20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Zayhowski (6400495). Zayhowski discloses a device **Fig. 1** for

producing laser radiation having a wavelength of about 2 μm (as rounded to the nearest whole number) comprising a solid-state sample **143** capable of producing lasing transitions corresponding to a wavelength of about 2 μm and a source of pumping radiation **100** produced thereby is absorbed by the solid-state sample **143**, causing the solid-state sample **143** to emit radiation having a wavelength of about 2 μm , **see col. 2, lines 39-58.**

Regarding claim 8, Zayhowski discloses the solid-state sample is interposed between a second pair of members **133, 134**, at least one of which is reflective to radiation having a wavelength of about 2 μm .

Regarding claim 9, Zayhowski discloses the second pair of members **133, 134** located within the source of radiation **100** having a wavelength of about 1 μm .

Regarding claim 11, Zayhowski discloses the source of radiation **100** having a wavelength **102** of 1.064 μm .

Regarding claims 12, 19, 20 and 22, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the rejection used against the device, stands for the method as well.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 3-7 and 14-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Meissner and Zayhowski. Meissner, as applied to claims 1, 2, 12 and 13 above, teach all the stated limitations except the source of pumping radiation having a wavelength of about 1 μm comprises a 1 μm resonant cavity having the solid-state sample located therein. Zayhowski teaches, all the limitations as applied to claims 1, 8, 9, 11-12, 19, 20 and 22 above, and the source of pumping radiation having a wavelength of about 1 μm comprises a 1 μm resonant cavity having the solid-state sample located therein. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the teachings of Meissner to that of Zayhowski, since Zayhowski teaches the solid-state sample (as a matter of design choice) may consist of semiconductor material, **see Zayhowski, col. 5, line 22- col. 6, line 32**, and Meissner teaches the solid-state material to be Tm:YAG as a suitable substitute for Cr:YAG of Zayhowski, **see Meissner, col. 10, lines 14- col. 11, line 40**.

Regarding claims 4 and 5, Zayhowski teach the claimed limitation, **see Fig. 1**.

Regarding claim 6, Meissner teach a plurality of array of laser diodes, **1005**.

Regarding claim 7, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 14-18, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, the rejection used against the device, stands for the method as well.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cornelius H. Jackson whose telephone number is (703) 306-5981. The examiner can normally be reached on 8:00 - 5:00, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.


chj

September 28, 2002


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